CLAIM OR CLAIMS

1. A method for differential compression of a body of data S with respect to a body of data T, comprising the steps of:

initializing a sliding window W of size $\text{MAX}\{m,n\}+K$

so that its rightmost m characters are S,

where K is an integer such that $0 \leq K < \text{MIN}\{m,n\}$;

performing sliding window compression of T with window W,

to produce a sequence of pointers,

where each of said pointers represents a single character

or represents a copy of an earlier substring of T

or represents a copy of a substring of S,

such that at least one of said pointers represents a copy of a substring of S;

transmitting each pointer of said sequence of pointers to a utilization device

that contains a copy of S;

upon receiving each of said pointers at said utilization device,

performing an additional sliding window decoding step in the recovery of T,

in such a way that the size of the memory used is no more than $\text{MAX}\{m,n\} + K$,

and such that after the last pointer is received T is fully recovered.

2. A method according to Claim 1, further comprising the step of:

Rearranging substrings of S to that S is better aligned with T.

3. A method according to Claim 1 where $K \leq \text{MIN}\{m,n\}/2$.

4. A method according to Claim 1 where K is $O(\sqrt{\text{MIN}\{m,n\}})$.

5. A method according to Claim 1 where K=0.

6. A method for representing a first body of data T of size n by a second body of data S of size m and a sequence of pointers,

where each of said pointers represents a single character or represents a copy of an earlier substring of T or represents a copy of a substring of S,

such that at least one of said pointers represents a copy of a substring of S,

so that it is possible to recover T from S by processing said sequence of pointers and overwriting S from left to right,

in such a way that the size of the memory used is no more than $\text{MAX}\{m,n\} + K$,

where K is an integer such that $0 \leq K < \text{MIN}\{m,n\}$.

7. A method according to Claim 6, further comprising the step of:

Rearranging substrings of S to that S is better aligned with T.

8. A method according to Claim 6 where $K \leq \text{MIN}\{m,n\}/2$.

9. A method according to Claim 6 where K is $O(\sqrt{\text{MIN}\{m,n\}})$.

10. A method according to Claim 6 where K=0.

11. A method of recovering a first body of data T of size n from a second body of data S of size m and a sequence of pointers, where each of said pointers represents a single character or represents a copy of an earlier substring of T or represents a copy of a substring of S,

such that at least one of said pointers represents a copy of a substring of S,

by processing said sequence of pointers and overwriting S from left to right,

in such a way that the size of the memory used is no more than $\text{MAX}\{m,n\} + K$,

where K is an integer such that $0 \leq K < \text{MIN}\{m,n\}$.

12. A method according to Claim 11, further comprising the step of:

Rearranging substrings of S to that S is better aligned with T.

13. A method according to Claim 11 where $K \leq \text{MIN}\{m,n\}/2$.

14. A method according to Claim 11 where K is $O(\sqrt{\text{MIN}\{m,n\}})$.

15. A method according to Claim 11 where K=0.

16. A system for differential compression of a body of data S with respect to a body of data T, comprising the steps of:

means for initializing a sliding window W of size $\text{MAX}\{m,n\}+K$
so that its rightmost m characters are S,
where K is an integer such that $0 \leq K < \text{MIN}\{m,n\}$;

means for performing sliding window compression of T with window W,
to produce a sequence of pointers,
where each of said pointers represents a single character
or represents a copy of an earlier substring of T
or represents a copy of a substring of S,
such that at least one of said pointers represents a copy of a substring of S;

means for transmitting each pointer of said sequence of pointers to a utilization device
that contains a copy of S;

means for upon receiving each of said pointers at said utilization device,
performing an additional sliding window decoding step in the recovery of T,
in such a way that the size of the memory used is no more than $\text{MAX}\{m,n\} + K$,
and such that after the last pointer is received T is fully recovered.

17. A system as in Claim 16, further comprising the step of:

Rearranging substrings of S to that S is better aligned with T.

18. A method according to Claim 16 where $K \leq \text{MIN}\{m,n\}/2$.

19. A method according to Claim 16 where K is $O(\sqrt{\text{MIN}\{m,n\}})$.

20. A method according to Claim 16 where K=0.

21. A system for recovering a first body of data T of size n from a second body of data S of size m and a sequence of pointers,
where each of said pointers represents a single character or represents a copy of an earlier substring of T or represents a copy of a substring of S,
such that at least one of said pointers represents a copy of a substring of S,
with means for:

processing said sequence of pointers and overwriting S from left to right,
in such a way that the size of the memory used is no more than $\text{MAX}\{m,n\} + K$.

22. A system as in Claim 21, further comprising the step of:

Rearranging substrings of S to that S is better aligned with T.

23. A system for differential compression and decompression of a body of data T with respect to a body of data S comprising means for:

computing strongly aligned moves and using an off-the-shelf compression and decompression method to represent the portions of T not represented by substring moves within S, in such a way that the size of the memory used when decoding is no more than $\text{MAX}\{m,n\} + K$, where K is an integer such that $0 \leq K < \text{MIN}\{m,n\}$.